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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/521,892

01/19/2005

Johann Engelhardt

5005-1090

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10/04/2007

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EXAMINER

PRITCHETT, JOSHUA L

ART UNIT

PAPER NUMBER

2872

MAIL DATE

DELIVERY MODE

10/04/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/521,892

Applicant(s)

ENGELHARDT, JOHANN

Examiner

Joshua L. Pritchett

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21, 23, 25-27, 30, 32-39 and 41-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21, 23, 25-27, 30, 32-39 and 41-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f):
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This action is in response to Request for Continued Examination and Amendment filed September 21, 2007. Claims 21, 23, 25-27 and 39 are amended and claims 22, 24 and 40 are cancelled and claims 41-44 are added as requested by the applicant.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21, 23 and 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel (US 2002/0171843) in view of Clark (US 5,969,851).

Regarding claim 21, Frankel teaches a first dispersive element (13b) configured to split a first and second reference beam from the first light beam (from 11a) (Fig. 1); a second dispersive element (17a) configured to split a third and fourth reference beam from the first light beam (Fig. 1). Frankel suggests tuning the light with an ITU position (paras. 0017-0018) but lacks specific reference to the position detector. Clark teaches a position detector (16 and 17) configured to detect respective positions of the reference beams so as to enable at least one of a respective

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propagation direction and a respective position of at least one of the first and second light beams to be adjusted as a function of at least one of the detected respective positions of the reference beams (Fig. 1; col. 5 lines 23-63). Spanner further teaches a control element (col. 5 lines 23-63) configured to adjust a propagation direction of the first light beam. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the beam splitting device of Frankel have a position detector as taught by Clark for the purpose of insuring alignment of the lasers to help prevent incorrect determination of the wavelength by introducing artificial lag time through misalignment.

Regarding claim 23, Frankel teaches the first dispersive element includes a first interface and the second dispersive element includes a second interface (Fig. 1).

Regarding claim 35, Frankel teaches the use of a CCD as a detector (para. 0006).

Regarding claims 36-38, Frankel teaches the invention as claimed but lacks reference to the position detector. Clark teaches a first detector (16) configured to detect the respective position of each of the reference beams simultaneously (Fig. 1). Clark further teaches the position detector is configured to be calibrated for different respective detectable positions of the reference beams (col. 5 lines 23-63). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the beam splitting device of Frankel have a position detector as taught by Clark for the purpose of insuring alignment of the lasers to help prevent incorrect determination of the wavelength by introducing artificial lag time through misalignment.

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Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel (US 2002/017183) in view of Clark (US 5,969,851) as applied to claim 21 above, and further in view of Spanner (US 6,535,290).

Frankel in combination with Clark teaches the invention as claimed but lacks reference to the dispersive element. Spanner teaches the use of a grating (2.1; col. 4 line 55), which is a dispersive element. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the beam splitting device of Frankel in combination with Clark have a dispersive element of Spanner for the purpose of effectively redirecting the path of the reference beams split off of the light beam to minimize the amount of light lost and thereby maximize the amount of light contacting the position detector.

Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel (US 2002/0171843) in view of Clark (US 5,969,851) as applied to claim 21 above, and further in view of Cook (US 3,905,684).

Frankel in combination with Clark teaches the invention as claimed but lacks reference to the first and second beam splitting devices being part of a same optical component. Cook teaches the use of prisms (which are dispersive elements) combined together to form a single optical component capable of splitting multiple reference beams from a light beam (Fig. 2a). Cook shows separate prisms in Fig. 1a then shows the prism combined into a single optical component in Fig. 2a. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Frankel in combination with Clark invention form a single optical component for the purpose of avoiding unwanted reflection of light at the interface of the

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prisms and air which would reduce the amount of light contacting the detector and reduce the detector signal strength.

Claims 30, 32-34 and 32-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel (US 2002/0171843) in view of Clark (US 5,969,851) as applied to claim 21 above, and further in view of Amon (US 4,746,798).

Frankel teaches the two light beams initially combined through the use of a dichroic mirror (13a) upstream of the first beam splitting device (13b; Fig. 1) but lacks reference to tilting that mirror. Amon teaches the use of tilting a dichroic mirror based on the signal produced by the position of light on a detector (col. 7 lines 10-20). The tilting of the Frankel dichroic mirror (13a) would control only the position of the light coming from laser (11b) by changing the angle which the beam travels through the system. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Frankel in combination with Clark invention have the dichroic mirror of Frankel to be tiltable as taught by Amon for the purpose of correcting for any lag time inherently in the system to obtain a more precise result for the unknown wavelength laser.

Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel (US 2002/0171843) in view of Clark (US 5,969,851) and Krantz (US 6,248,988).

Frankel teaches a first dispersive element (13b) configured to split a first and second reference beam from the first light beam (from 11a) (Fig. 1); a second dispersive element (17a) configured to split a third and fourth reference beam from the first light beam (Fig. 1). Frankel

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suggests tuning the light with an ITU position (paras. 0017-0018) but lacks specific reference to the position detector and a controller. Clark teaches a position detector (16 and 17) configured to detect respective positions of the reference beams so as to enable at least one of a respective propagation direction and a respective position of at least one of the first and second light beams to be adjusted as a function of at least one of the detected respective positions of the reference beams (Fig. 1; col. 5 lines 23-63). Clark further teaches a control element (col. 5 lines 23-63) configured to adjust a propagation direction of the first light beam. Spanner teaches a control element that is capable of adjusting the propagation direction of the light beam. Krantz teaches scanning a light beam using an acousto-optic scanner (27) based on the position detected (col. 7 lines 16-18). The pixels provide location information to controller (65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the beam splitting device of Frankel have a position detector as taught by Clark for the purpose of insuring alignment of the lasers to help prevent incorrect determination of the wavelength by introducing artificial lag time through misalignment. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the beam splitting device of Frankel have a controller as taught by Krantz for the purpose of scanning the laser over the surface of the specimen.

Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel (US 2002/0171843) in view of Clark (US 5,969,851) and Krantz (US 6,248,988) as applied to claim 39 above, and further in view of Cook (US 3,905,684).

Frankel in combination with Clark and Krantz teaches the invention as claimed but lacks reference to the first and second beam splitting devices being part of a same optical component. Cook teaches the use of prisms (which are dispersive elements) combined together to form a single optical component capable of splitting multiple reference beams from a light beam (Fig. 2a). Cook shows separate prisms in Fig. 1a then shows the prism combined into a single optical component in Fig. 2a. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Frankel in combination with Clark and Krantz invention form a single optical component for the purpose of avoiding unwanted reflection of light at the interface of the prisms and air which would reduce the amount of light contacting the detector and reduce the detector signal strength.

Claims 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel (US 2002/0171843) in view of Clark (US 5,969,851) and Krantz (US 6,248,988) as applied to claim 39 above, and further in view of Amon (US 4,746,798).

Frankel teaches the two light beams initially combined through the use of a dichroic mirror (13a) upstream of the first beam splitting device (13b; Fig. 1) but lacks reference to tilting that mirror. Amon teaches the use of tilting a dichroic mirror based on the signal produced by the position of light on a detector (col. 7 lines 10-20). The tilting of the Frankel dichroic mirror (13a) would control only the position of the light coming from laser (11b) by changing the angle which the beam travels through the system. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Frankel in combination with Clark and Krantz invention have the dichroic mirror of Frankel to be tiltable as taught by Amon for the

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purpose of correcting for any lag time inherently in the system to obtain a more precise result for the unknown wavelength laser.

Response to Arguments

Applicant's arguments, see Amendment, filed September 21, 2007, with respect to the rejection(s) of claim(s) 21 and 39 under Spanner have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Clark (US 5,969,851). Applicant argued the Spanner reference failed to teach the position detector and control system as claimed. The Clark reference was added to teach the limitations regarding the position detectors and control system.

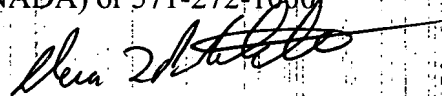
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L. Pritchett whose telephone number is 571-272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Joshua L Pritchett
Examiner
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